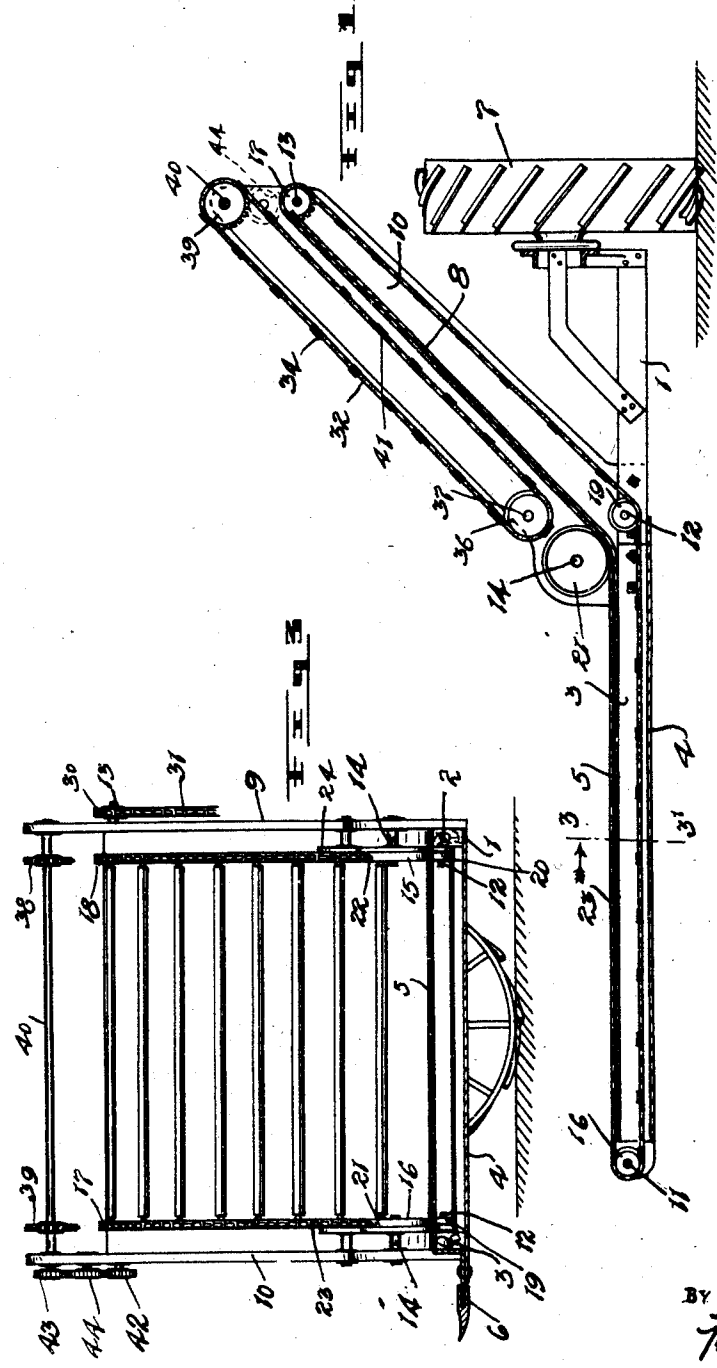
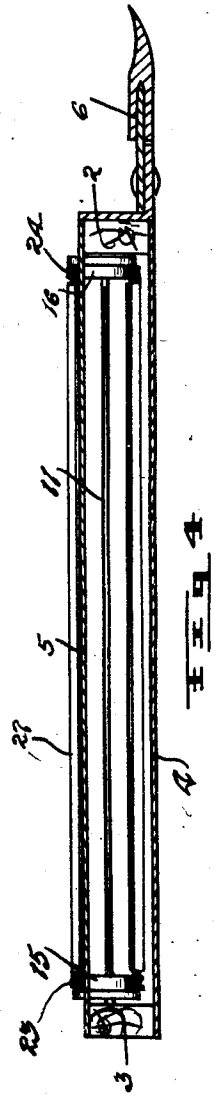
Aug. 14, 1928. 1,680,889

J. J. KLUCK

BINDING MACHINE

Filed Feb. 19, 1926 2 Sheets-Sheet 1





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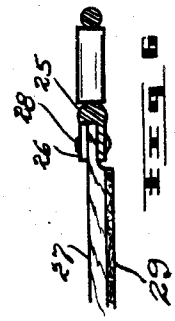

FIG. 6

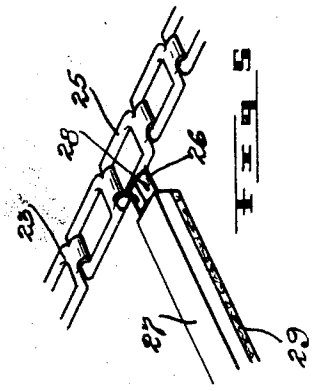

FIG. 5

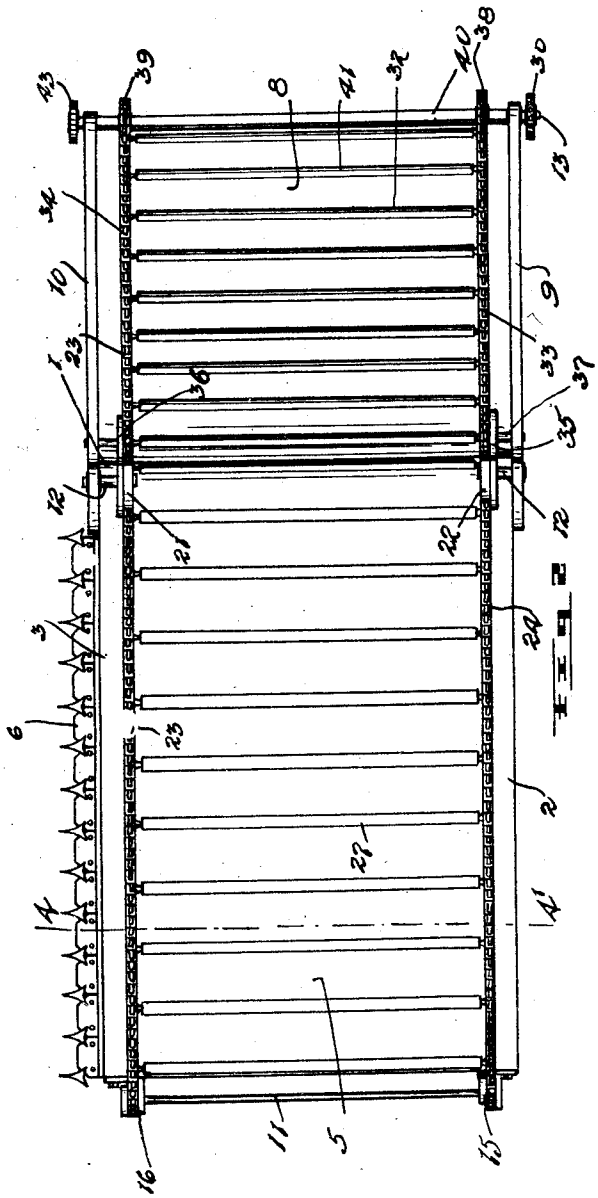

FIG. 2

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UNITED STATES PATENT OFFICE.

JOHN J. KLUCK, OF MACKLIN, SASKATCHEWAN, CANADA.

BINDING MACHINE.

Application filed February 19, 1926, Serial No. 89,467, and in Canada January 25, 1926.

The invention relates to improvements in binding machines particularly to improvements associated with the platform and elevators thereof and an object of the invention is to provide a binding machine having a horizontal platform pan and an inclined elevator pan continuous therewith, thereby avoiding any loss of grain at the juncture of such pans and to associate with the pans an endless conveyor operating over the upper surfaces thereof and embodying side chains and slats carried thereby, the slats being fitted with felt or such like resilient material adapted to sweep the faces of the pans and gather and deliver all loose grain kernals as well as the cut grain.

A further object of the invention is to provide an elevator above the inclined pan, such elevator being supplied with felt faced slats co-acting with the former conveyor to deliver the cut grain.

With the above more important objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawings, in which:

Fig. 1 is a vertical sectional view centrally and longitudinally through a binding machine equipped with my invention.

Fig. 2 is a plan view thereof.

Fig. 3 is a cross vertical sectional view at 3—3′ Figure 1 and looking in the direction of the applied arrow, and with the overlying elevator removed.

Fig. 4 is an enlarged, detailed, vertical sectional view at 4—4′ Figure 2.

Fig. 5 is a perspective view of a portion of one of the chains and a slat carried thereby.

Fig. 6 is a detailed, vertical sectional view showing the manner in which the end of the slat is connected to the chain.

In the drawings like characters of reference indicate corresponding parts in the several figures.

The main frame 1 of the platform presents similar parallel side beams 2 and 3 which are connected on the underside by a guard plate 4 and on the top side by a flat lying pan or plate 5. The customary cutting knife 6 is located at the front of the platform and cuts the standing grain in the usual manner as the machine is drawn over the field, the cut grain falling backwardly on to the pan 5 of the platform in the ordinary manner, it being here understood that the customary binder reel (not shown) is used. The bull wheel 7 of the binding machine and parts associated therewith are as customarily used. The inner end of the pan 5 is extended angularly upwardly to provide a smooth-faced elevator pan or plate 8 which is carried by the sides 9 and 10 of the elevator.

I wish it to be particularly noted that there is no crack or opening at the juncture of the pans so that any grain swept over one pan is delivered on to the other and is not permitted to escape through on to the ground and become lost as occurs in the present types of binding machines of which I am familiar.

The main frame carries a cross shaft 11 and a pair of aligned stub shafts 12 and the side frames 9 and 10 carry an elevated cross shaft 13 and a pair of aligned stub shafts 14. The shaft 11 is fitted with flanged pulleys 15 and 16 and the shaft 13 is provided with chain wheels 17 and 18, and the stub shafts 12 and 14 are provided with flanged pulleys 19 and 20, and 21 and 22, the latter pulleys being somewhat larger than the former. Similar endless side chains 23 and 24 pass around the pulleys 15 and 16 and around the chain wheels 17 and 18 and under the pulleys 19 and 20, and 21 and 22 as shown in Figure 1.

The pulleys 21 and 22 are located at the juncture of the pans and hold the top side of the chains down so that they travel over the upper surfaces of the pans. The pulleys 19 and 20 carry the under sides of the chains which it will be observed pass between the pan 5 and the guard plate 4, and these latter pulleys can be adjustable, whereby they can be used as chain tighteners.

At suitable intervals in the chains I provide special links, one of these links being shown at 25 in Figures 5 and 6 and wherein it will be observed that the said link is fitted with a socket-like side extension 26. The chains are so placed that the special links appear in opposing pairs and each pair of links carries a cross slat 27, the ends of which are permanently fastened by rivets 28 in the sockets, and the under sides of which are provided with a resilient material 29 such as a felt strip. The felt faces of the slats continuously engage the upper faces of the pans 5 and 8 in the movement of the conveyor and accordingly it will be

obvious that the slats not only collect the grain falling backwardly on to the pan 5, but also any loose kernels of grain which become dislodged from the heads and all short straw.

The chains 17 and 18 are used to drive the conveyor, which it will be observed taken in conjunction with the pans 5 and 8, functions for the same purpose as the present platform canvas and elevator canvas as appearing on binding machines now on the market.

The shaft 13 is supplied with a chain wheel 30 which carries a chain 31 driven from any suitable part of the binder mechanism.

In order to hold down the ascending grain passing over the pan 8 I have provided a top overlying elevator indicated generally by the reference numeral 32. This top elevator is formed from similar chains 33 and 34 which are carried by a pair of pulleys 35 and 36 mounted on similar aligned stub shafts 37 carried by the side members 9 and 10 and by chain wheels 38 and 39 mounted on a cross shaft 40 also carried by the side frames 9 and 10. The chains 33 and 34 are provided at intervals with special pairs of links similar to those 25 and these links carry felt faced cross slats 41 similar to those 27. The shaft 40 is driven by securing a gear wheel 42 to the shaft 13 and a gear wheel 43 to the shaft 40 and providing an intermeshing gear wheel 44 between the latter gears.

When the machine is running, the direction of travel of the underside of the top elevator is the same as the direction of travel of the top side of the under elevator so that the top elevator co-operates with the under elevator to elevate the grain therebetween.

I do not desire to be limited to the precise mechanism utilized for driving the various chains, nor to the manner in which the slats are connected to the chains as these parts might be obviously materially modified without departing from the spirit of the invention as set forth in the appended claims.

What I claim as my invention is:—

1. A binding machine having a horizontal lying smooth faced platform pan, an inclined smooth faced elevator pan continuous with the platform pan and an endless driven conveyor associated with the pans and presenting side chains and spaced cross slats carried at intervals by the chains, the said cross slats being provided on their under sides each with a strip of resilient material adapted to sweep the upper faces of the pans in the movement of the chains.

2. A binding machine having a horizontal lying smooth faced platform pan, an inclined smooth faced elevator pan continuous with the platform pan and an endless driven conveyor associated with the pans and presenting side chains and spaced cross slats carried at intervals by the chains, the said cross slats being provided on their under sides each with a strip of felt adapted to sweep the upper faces of the pans in the movement of the chains.

Signed at Winnipeg this 26th day of January, 1926.

JOHN J. KLUCK.